decade, however, found most of the Winter Wheat Belt bare of snow with high winds in the central-northern portion of the belt contributing to the removal of the cover. Some heaving was reported in sections of the Lake region and cool weather checked growth in Southern States, but advance was satisfactory in most areas, except that continued dry weather over considerable sections of the southern Great Plains was detrimental.

During the second decade further unseasonably cold weather occurred over the Winter Wheat Belt, but in all except the more western portion the unusually favorable growing conditions during the fall had permitted the wheat plants to establish a good root system. In the more western portions of the belt the persistent drought and low temperatures were decidedly unfavorable.

During the last decade continued dryness in the southwestern Great Plains was unfavorable for winter wheat and the absence of adequate snow cover caused considerable apprehension in the upper Ohio Valley, but grains in general continued in mostly satisfactory condition.

Corn and cotton.—Husking corn made good advance quite generally the first part of the first decade rather generally west of the Mississippi River and fairly good progress was made in eastern portions. During the second decade husking and cribbing was delayed or entirely suspended over the interior valleys because of stormy, wintry conditions. Excellent weather for husking prevailed during the last decade in those areas where this work had not been completed. Weather conditions during the first decade were favorable for cleaning up the cotton crop in the northwestern portion of the belt, but during the second decade little progress was made, due to inclement weather; practically all cotton remaining in the fields in Tennessee was picked during the last decade.

Miscellaneous.—The snow cover that obtained over Northern States during the first decade made much yard feeding of livestock necessary in the northern Great Plains. The colder weather during the second decade was very favorable for hog killing in southern sections. The range was generally snow-covered in most northern Rocky Mountain districts with new snow of benefit in other areas. There was a lack of adequate cover for meadows in the Lake region during the last decade; most of the ranges were closed in the northern Rockies. More snow was needed in lower portions of Colorado, but moisture was ample on most ranges of the Western States. Livestock continued good throughout the month, although some suffering with small losses was reported during the cold weather; feeding was general.

Rains over the Southeast improved winter truck the first part of the month, but the cold weather that overspread these sections during the latter part caused considerable injury to tender vegetation, although hardy truck was generally unharmed. Tobacco stripping was favored in most sections, although it was too dry for this work in Kentucky at the close of the month. Grinding sugar cane progressed favorably in Louisiana during the month; the freezes killed back cane shoots from early stubble. Citrus, as a whole, was uninjured by frost in Florida, and the showers and cooler weather were favorable. There was some firing necessary in California groves, but there was no serious injury. At the close of the month a severe cold wave was overspreading the Southeast, and this did much damage to truck and citrus at the beginning of January.

WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

NORTH ATLANTIC OCEAN

By F. A. YOUNG

The weather over the North Atlantic for December was unusually severe, even for this month which is normally one of the stormiest of the year. Not only was the number of days with gales in excess of the normal, but the abnormal pressure distribution during a protracted period when a deep depression covered the region usually occupied by the North Atlantic HIGH, with anticyclonic conditions over northern Europe and Iceland, was responsible for winds of hurricane force, accompanied by dangerous confused and cross seas. As shown by reports in table of gales and storms, lowest barometric readings of slightly over 28 inches were recorded. According to the press reports there were many casualties, and in a number of cases vessels were days late in reaching port. Storm reports from nearly 150 vessels have been received up to time of writing, a number of which are given in table.

As is usually the case during a stormy month, the number of days with fog was below the normal over the Grand Banks and steamer lanes, although reported on seven days along the American coast between Hatteras and New York, on three days in the western section of the Gulf of Mexico, and on three days in the square between the 30th and 35th parallels and the 50th and 55th meridians.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (75th meridian), North Atlantic Ocean, December, 1927*

Stations	Average pressure	Departure [1]	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Belle Isle	29.74	+0.04	30.44	8th	28.72	19th
Halifax	29.92	−0.06	30.60	4th	28.90	20th
Nantucket	30.00	−0.08	30.59	4th	29.28	14th
Hatteras	30.11	−0.03	30.62	10th	29.54	16th
Key West	30.08	−0.01	30.26	11th [2]	29.82	3d
New Orleans	30.17	+0.05	30.58	9th	29.76	12th
Cape Gracias, Honduras	29.92	−0.06	30.00	25th	29.82	2d
Turks Island	30.09	+0.06	30.20	11th [2]	29.90	26th
Bermuda	30.12	−0.03	30.62	11th	29.64	20th
Horta, Azores	29.89	−0.22	30.42	3d	28.84	16th
Lerwick, Shetland Islands	30.08	+0.36	30.80	28th	29.22	23d
Valencia, Ireland	29.74	−0.20	30.53	28th	28.41	22d
London	29.89	−0.13	30.52	28th	28.80	22d

[1] From normals shown on H. O. Pilot Chart, based on observ tions at Greenwich mean noon, or 7 a. m. 75th meridian.
[2] And on other dates.

It is difficult to give a detailed description of the conditions, as storm after storm moved across the ocean in rapid succession and there was not a day when heavy weather was not reported from some locality.

From the 3d to 9th severe conditions prevailed over the middle and eastern sections of the steamer lanes, the storm area reaching its greatest extent on the 5th. On the 3d–4th strong gales also occurred in the vicinity of Hatteras.

From the 13th to 24th low pressure was general in the region between the Azores and Bermudas, and on the 15th to 17th the storm area extended nearly as far as the tropics. Charts VIII to XI show the conditions from the 15th to 18th, inclusive. This disturbance reached its greatest intensity on the 16th with the very steep pressure gradient between the Azores and Iceland, as shown on Chart IX.

On the 19th a strong "norther" prevailed in the Gulf of Mexico as shown by report in table.

From the 19th to 21st St. Johns, Newfoundland, was near the center of an area of low pressure and moderate to strong gales prevailed in the southerly quadrants.

On the 28th a well-developed LOW was central near 28° N., 57° W.; this moved eastward, increasing in intensity. On the 29th and 30th the center was near 33° N., 48° W., and on both dates northerly winds of hurricane force were reported by vessels in the westerly quadrants. On the 31st, when near 30° N., 45° W., there was a marked decrease in intensity with rising pressure.

OCEAN GALES AND STORMS, DECEMBER, 1927

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
North Atlantic Ocean			° ′	° ′				*Inches*					
City of Flint, Am. S. S.	Middlesborough.	New York	53 18 N.	40 00 W.	Dec. 2	9a. 2	Dec. 4	29.04	WNW.	WNW., 11	WNW.	—, 12	Steady.
Mexican, Am. S. S.	Canal Zone	Charleston	31 27 N.	79 44 W.	3	Noon 3	4	29.64	NE.	NE., 10	N.	NE., 10	Do.
Westerdijk, Du. S. S.	Rotterdam	New York	46 20 N.	40 00 W.	3	2p. 4	5	29.56	NW.	W., 9	NW.	WNW., 11	WSW-WNW.
President Roosevelt, Am. S. S.	Cobh	do	50 58 N.	17 02 W.	5	5p. 5	9	28.71	W.	SE.	NW.	WNW., 12	SE-S-W.
Wytheville, Am. S. S.	Rotterdam	do	47 30 N.	37 50 W.	4	9p. 6	9	29.04	WSW.	W., 7	NNW.	N., 12	SW-W.
Albert Ballin, Ger. S. S.	Southampton	do	48 40 N.	29 00 W.	6	4a. 7	8	29.05	SSE.	W., 7	NW.	WNW., 12	S-W.
Arkansas, Dan. S. S.	Norfolk	Denmark	54 57 N.	23 57 W.	5	4a. 8	9	28.50	NNW.	SW., 8	SSE.	NW., 11	
Emanuel Nobel, Belg. S. S.	Antwerp	Philadelphia	48 00 N.	26 05 W.	7	8a. 9	10	29.06	W.	WNW., 11	WNW.	NNW., 12	W-SW-NW-N.
Hamburg, Ger. S. S.	New York	Cherbourg	46 06 N.	39 53 W.	13	8a. 14	14	28.93	NE.	NW., 10	NW.	NNE., 12	
Jobshaven, Du. S. S.	Bremen	Savannah	32 54 N.	48 13 W.	14	6a. 15	16	29.30	NNW.	WSW., 8	NW.	W., 12	SSW-W.
Westerner, Am. S. S.	Antwerp	New York	37 19 N.	47 11 W.	15	11a. 15	16	28.17	W.	—, 10	NNW.	NW., 12	W-NNW.
Drechtdijk, Du. M. S.	do	Canal Zone	37 58 N.	35 16 W.	15	5p. 16	17	28.13	SSE.	SW., 10	NW.	W., 10	SSW-WSW.
Iroquois, Br. S. S.	London	Galveston	37 50 N.	34 08 W.	16	—, 16	17	28.30	SW.	S., 10	NNW.	WNW, 11	SW-WNW.
Topa Topa, Am. S. S.	Southampton	New Orleans	40 13 N.	32 40 W.	13	3p. 16	18	28.22	S.	SSW., 9	W.	W., 10	SSW-WNW.
Rockaway Park, Am. S. S.	Newport News.	Manchester	45 46 N.	40 08 W.	16	4p. 18	18	28.61		WNW., 8		NW., 12	NW-WSW.
Tegucigalpa, Hond. S. S.	Vera Cruz	New Orleans	26 59 N.	91 00 W.	19	4a. 19	19	30.06	NE.	NE., 8		—, 9	Steady.
Kifuku Maru, Jap. S. S.	Hamburg	New York	32 45 N.	56 50 W.	19	1a. 20	20	29.24	WSW.	SW., 10	W.	WSW., 11	Do.
West Zeda, Am. S. S.	do	Mobile	43 52 N.	25 14 W.	21	6p. 21	22	28.72	SSW.	SW., 10	W.	SW., 12	SSW-W.
Tulsa, Am. S. S.	Rotterdam	Jacksonville	44 01 N.	19 00 W.	21	—, 21	22	28.75	SW.	SW., 12	SW.	—, 12	WSW-W.
Emlynian, Br. S. S.	Montreal	Hamburg	58 35 N.	14 18 W.	27	10a. 28	28	28.80	SSE.	NW., 12	NW.	NW., 12	S-NW.
Waban, Am. S. S.	Rotterdam	Galveston	31 56 N.	50 40 W.	29	Noon 29	31	29.23	NNE.	NNE.	N.	N., 12	NNE-N-W.
West Zeda, Am. S. S.	Hamburg	Mobile	30 12 N.	49 50 W.	30	8a. 30	31	29.26	NNW.	NNW., 8	NNW.	NNW., 12	Steady.
Cherca, Ital. S. S.	Valencia, Spain.	New York	29 50 N.	50 40 W.	30	4a. 30	31	29.27	NW.	NW., 10	NW.	—, 10	Do.
North Pacific Ocean													
Steel Trader, Am. S. S.	Kobe	Maui	34 49 N.	155 38 E.	Nov. 30	2a., 1	Dec. 1	29.49	SSE.	Calm	ENE.	NE., 10	SW-0-NE.
Yogen Maru, Jap. S. S.	Muroran	Vancouver	49 55 N.	160 50 W.	Dec. 1	8a., 2	2	28.92	SSE.	S., 10	SW.	SSW., 11	1 point.
Steel Ranger, Am. S. S.	San Pedro	Yokohama	33 47 N.	174 10 W.	1	3p., 1	2	29.84	SSW.	SW., 10	W.	SW., 10	SSW-SW.
Oakridge, Am. S. S.	Yokohama	Portland	44 28 N.	161 34 E.	1	6a., 2	3	29.99	NNW.	NW., 8	WNW.	NW., 9	Steady.
Do	do	do	49 00 N.	175 54 E.	4	4a., 5	5	28.57	SSW.	SSW., 7	SW.	S., 11	SSW-SW.
Sunelseco, Am. S. S.	San Pedro	New York	15 17 N.	94 14 W.	3	2a., 3	4	29.76	NE.	NNE.	N.	NE., 8	Steady.
Yoneyama Maru, Jap. S. S.	Wakematsu	Astoria	48 56 N.	165 12 E.	3	2p., 4	6	28.66	SE.	S., 4	WSW.	W., 10	
Do	do	do	50 00 N.	147 30 W.	7	9a., 7	8	29.06	SSE.	SSE., 9	S.	S., 9	SSE-S.
Steel Ranger, Am. S. S.	San Pedro	Yokohama	33 50 N.	168 00 W.	7	6p., 7	7	29.61	SSW.	SW., 11	SW.	SW., 12	SW-W.
Pres. Taft, Am. S. S.	San Francisco	do	32 50 N.	169 15 E.	7	—, 7	7	29.64	S.	SW., 10	W.	SW., 10	SSW-W.
Scottsburg, Am. S. S.	Manila	San Pedro	38 05 N.	158 41 E.	7	9a., 7	8	29.48	NW.	NW., 7	NW.	NW., 10	WNW-NW.
Wawalona, Am. S. S.	Dairen	Portland	47 38 N.	175 28 E.	7	4a., 8	8	28.05	SE.	SSW., 10	W.	SSW., 11	SSW-SW.
West Nomentum, Am. S. S.	Portland	Nagoya	49 38 N.	175 20 E.	8	9a., 8	9	28.18	E.	NE., 7	SW.	NE., 9	NE-NW.
Manulani, Am. S. S.	Honolulu	San Francisco	22 00 N.	156 40 W.	8	5a., 8	10	29.68	ENE.	ENE., 8	ESE.	ESE., 8	ENE-ESE.
Tecumseh, Br. S. S.	Yokohama	San Pedro	36 14 N.	158 48 E.	9	Noon, 10	10	29.37	SSE.	SW., 6	SW.	SSE., 9	SE-S-SW.
Pres. Jefferson, Am. S. S.	San Francisco	Honolulu	37 16 N.	124 05 W.	9	10p., 9	11	29.82	WNW.	WNW., 6	N.	N., 9	NW-N.
Illingworth, Br. S. S.	Muroran	Vancouver	45 20 N.	164 50 E.	11	2p., 11	12	28.59	W.	W., 8	W.	W., 9	SW-W.
Edda, It. S. S.	Seattle	Colon	44 30 N.	125 10 W.	12	3p., 13	13	29.53	NW.	SW., 9	N.	WSW., 10	W-SW.
Scottsburg, Am. S. S.	Manila	San Pedro	43 38 N.	164 07 W.	14	5p., 14	15	29.72	S.	S., 7	SSW.	S., 9	S-SSW.
Steel Trader, Am. S. S.	Kobe	Maui	33 00 N.	164 56 E.	16	5p., 17	18	29.59	SSW.	SSE., 10	SSW.	SSE., 10	SSE-SSW.
Hayo Maru, Jap. S. S.	Muroran	Juan de Fuca	46 13 N.	177 08 E.	17	Mdt., 18	19	29.04	SE.	SW., 10	WNW.	WSW., 11	SSW-WSW.
West Cadron, Am. S. S.	Dairen	Portland	46 06 N.	165 40 E.	17	Noon, 18	19	28.12	E.	S., 3	W.	W., 10	E-S-W.
Yone Maru, Jap. S. S.	Muroran	Vancouver	49 10 N.	171 30 E.	18	5p., 22	23	29.00	SE.	S., 8	SSW.	NNW., 10	S-SSW.
Makiki, Am. S. S.	Hilo	Bellingham	37 34 N.	140 41 W.	23	Mdt., 23	24	29.96	NW.	NW., 9	N.	NW., 9	Steady.
Dilworth, Am. S. S.	Manila	San Francisco	39 30 N.	152 00 E.	23	3a., 24	24	28.85	SSE.	SSW., 4	S.	S., 11	SSW-S.
West Prospect, Am. S. S.	do	do	38 50 N.	157 20 E.	23	10p., 24	25	29.01	SW.	SSW., 9	W.	SSW., 10	S-SW.
Pres. Jefferson, Am. S. S.	Honolulu	Yokohama	28 48 N.	157 40 E.	24	2a., 25	25	29.71	SE.	SW., 9	NW.	SW., 9	S-SW-W.
Makena, Am. S. S.	Port Angeles	Napoopoo	41 28 N.	135 27 W.	24	6a., 24	25	29.45	N.	NNW., 8	N.	N., 9	N-NNW-N.
West Holbrook, Am. S. S.	Otaru	Portland	46 47 N.	157 24 E.	24	—, 24	26	28.47	ENE.	SW., 7	SW.	SW., 9	SSE-SW.
San Mateo, Am. S. S.	San Francisco	Cristobal	37 15 N.	122 40 W.	24	10p., 24	26	29.64	SE.	SE., 8	N.	ESE., 9	SE-S.
Atlantic Maru, Jap. S. S.	Kobe	San Francisco	42 45 N.	159 05 E.	23	10p., 24	27	28.63		S., 9		S., 11	S-WSW.
Tamaha, Br. S. S.	Shanghai	San Pedro	34 00 N.	138 00 E.	28	Noon, 29	29	29.38	NNW.	W., 12	W.	W., 12	NW-W.
West Hixton, Am. S. S.	Yokohama	Portland	46 10 N.	153 00 W.	29	3p., 29	29	29.04	SE.	ESE., 9	SE.	ESE., 9	ESE-SE.
Makawell, Am. S. S.	Ahukini	San Francisco	30 30 N.	143 51 W.	29	2a., 29	29	29.67	SSE.	SSE., 7	SSE.	SSE., 10	SSE-S.
Silverpine, Br. M. S.	San Francisco		27 25 N.	162 53 W.	25	Jan. 2	Jan. 3	29.63	SE.	WNW., 9	WNW.	W., 10	WNW-NW.